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## CLAIMS

1. A method for direct transformation of a host cell comprising the steps:
  - (a) generating partially overlapping intermediate fragments by polymerase chain reaction, said partially overlapping intermediate fragments further comprising a first intermediate fragment and a second intermediate fragment, said first and second intermediate fragments each comprising at least one mutated codon of interest, a flanking nucleotide sequence and a digestion site;
  - (b) joining ends of said intermediate fragments to produce a linear product by fusion polymerase chain reaction;
  - (c) ligating of the linear product to create a circular product; and
  - (d) incubating said host cell with said circular product.
2. The method of claim 1 wherein said intermediate fragment containing said codon of interest comprises a forward and a reverse mutagenic primer comprising a desired mutation and a flanking sequence.
3. The method of claim 1 wherein said digestion site is an *Apal* digestion site.
4. The method of claim 3 wherein said forward digestion site primers comprises the polynucleotide sequence GTGTGTGGGCCCATCAGTCTCACGACC.
5. The method of claim 3 wherein said reverse digestion site primers comprises the polynucleotide sequence GTGTGTGGGCCCTATTCGGATATTGAG.
6. A vector for direct transformation of a host cell comprising
  - (a) forward mutagenic primer;
  - (b) a reverse mutagenic primer, wherein said forward and reverse mutagenic primers have an overlapping portion upstream and downstream of said mutagenic codon of interest;
  - (c) a forward digestion site primer;
  - (d) a reverse digestion site primer, wherein said forward and reverse digestion site primers each have a digestion site, said digestion sites fused at end to form a circular polynucleotide sequence.

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7. The vector of claim 6 wherein said forward digestion site primer comprises the polynucleotide sequence GTGTGTGGGCCCATCAGTCTCACGACC.

8. The method of claim 3 wherein said reverse digestion site primer comprises the polynucleotide sequence GTGTGTGGGCCCTATTCGGATATTGAG.